GGGGGGGGGGGGGGTCAGAGGGAGCTTTCTTTTAGGCCCGTCCATCTGTGAAT
CTAACCTCAGTTTCTGGGAATCAGGAAGCATGCATCTCCTCTTAGTTCAGCTG
CTTGTTCTCTTGCCTCTGGGGAAGGCAGACCTATGTGTGGATGGCTGCCAGAG
TCAGGGCTCTTTATCCTTTCCTCTCCTAGAAAGGGGTCGCAGAGATCTCCACG
TGGCCAACCACGAGGAGGCAGAAGACAAGCCGGATCTGTTTGTGGCCGTGCCA
CACCTCATGGGCACCAGCCTGGCTGGGGAAGGCCAGAGGCAGAGAGGGAAGAT
GCTGTCCAGGCTTGGAAGATTCTGGAAGAAACCTGAGACCGAATTTTACCCCC
CAAGGGATGTGGAAAGCGATCATGTCTCATCGGGGATGCAGGCCGTGACTCAG
CCAGCAGATGGGAGGAAAGTGGAGAGATCACCTCTACAGGAGGAAGCCAAGAG
GTTCTGGCATCGGTTCATGTTCAGAAAGGGCCCGGCGTTCCAGGGAGTCATCC
TGCCCATCAAAAGCCACGAAGTACACTGGGAGACCTGCAGGACTGTGCCCTTC
AACCAGACCATTGCCCATGAAGACTGTCAAAAAGTCGTTGTCCAGAACAACCT
TTGCTTTGGCAAATGCAGTTCCATTCGTTTTCCCGGAGAAGGGGCAGATGCCC
ACAGCTTCTGCTCCCACTGCTCGCCCACCAAATTCACCACCGTGCACTTGATG
CTGAACTGCACCAGCCCAACCCCCGTGGTCAAGATGGTGATGCAAGTAGAAGA
GTGTCAGTGCATGGTGAAGACGGAACGTGGAGAGGAGCGCCTCCTACTGGCTG
GTTCCCAGGGTTCCTTCATCCCTGGACTTCCAGCTTCAAAAACAAACCCATGA
ATTACCTCAACAGAAAGCAAAACCTCAACAGAATAAGTGAGGGTTATTCAATC
TGGAAATGTTATGTGAGTTATATAAAGATCAGTGGAAAATATCTTTCTCTCTC
CCTCTCTCCCCCTCTCTCTTCTCTCTATTTTCTCTCTCTCTCTCTCTCTCT
CTCTCTCTCTCTCTCTCTCACACACACACACACACACACACACACACACACAT
GTTTGTGTTTAGACAGGGTCTTATGTATTCTCAGCTGGCCTCAAACTCACAAT
GTGGCTGGGGATGATTTTAAACTCCTGATCCAATTCCTGAGTGCTGGGATTAC
AGACATGCTCCATAANACATAGCTCCCAGAAGGATTTTTAAAAGAGATTTTGC
ATGTTTCAAAGTTGCCTTTGAGACTCAGAAATATTTTGATNTATTGAATGGCC
TTGCCACAGATGTGGGAGGCAGCTTGCTTGGTGGCCCAAGTATTTTTTTTTTG
TTCGTTCAGAATTCTCCACATGAAGTTTTTACTGTTGGTTATCTGGCGTTGAA
GAAGGAATAGTGAAGGTACTTTTAACAGTTTACACGTGGAAGGGGCTCAGGCA
CTAGGAACCAACCTTTTCCCGGAATATGAGGAAAATACATGAACAGTATTAGA
GTCACTTGAGGAAGTTACTAGGAAACGCCATAAGTCTCCAAGTACATTGTGAG
TCATTTTGAAGGACAATCGTGTATATAGACGAAATCTTCTACTCGTATGCTTT
TGAATCTTCTAGCAAGTTAGGTTTCTATGTTTGGGCTTCTTCCTATTGTCTAA
GAGTATGTGTGACAAATTCAACCTGACAAATACCTCAATGGCAAATTCTGACC
CTG (SEQ ID NO:1)

MHLLLVQLLVLLPLGKADLCVDGCQSQGSLSFPLLERGRRDLHVANHEEAEDK
PDLFVAVPHLMGTSLAGEGQRQRGKMLSRLGRFWKKPETEFYPPRDVESDHVS
SGMQAVTQPADGRKVERSPLQEEAKRFWHRFMFRKGPAFQGVILPIKSHEVHW
ETCRTVPFNQTIAHEDCQKVVVQNNLCFGKCSSIRFPGEGADAHSFCSHCSPT
KFTTVHLMLNCTSPTPVVKMVMQVEECQCMVKTERGEERLLLAGSQGSFIPGL
PASKTNP (SEQ ID NO:2)

FIGURE 1

Construct

Gene: 67 **GI Number(s):** 6753409

Gene Family: Growth Factor Inhibitor

Gene Subfamily: Cerberus

Gene Sequence: full-length cDNA, Mouse

underlined = deleted in targeting construct

[ ] = sequence flanking Neo insert in targeting construct

[GGGGGGGGGGGGGGTCAGAGGGAGCTTTCTTTTAGGCCCGTCCATCTGTGAATCTAACC
TCAGTTTCTGGGAATCAGGAAGCATGCATCTCCTCTTAGTTCAGCTGCTTGTTCTCTTGC
CTCTGGGGAAGGCAGACCTATGTGTGGATGGCTGCCAGAGTCAGGGCTCTTTATCCTTTC
CCTCCTAGAAAGGGGTCGCAGAGATCTCCACGTGGCCAACCACGAGGAGGCAGAAGACAA
]GCCGGATCTGTTTGTGGCCGTGCCACACCTCATGGGCACCAGCCTGGCTGGGGAAGGCC
AGAGGCAGAGAGGGAAGATGCTGTCCAGGCTTGGAAGATTCTGGAAGAAACCTGAGACCG
AATTTTACCCCCCAAGGGATGTGGAAAGCGATCATGTCTCATCGGGGATGCAGGCCGTGA
CTCAGCCAGCAGATGGGAGGAAAGTGGAGAGATCACCTCTACAGGAGGAAGCCAAGAGGT
TCTGGCATCGGTTCATGTTCAGAAAGGGCCCGGCGTTCCAGGGAGTCAT[CCTGCCCATC
AAAAGCCACGAAGTACACTGGGAGACCTGCAGGACTGTGCCCTTCAACCAG]ACCATTGC
CCATGAAGACTGTCAAAAAGTCGTTGTCCAGAACAACCTTTGCTTTGGCAAATGCAGTTC
CATTCGTTTTCCCGGAGAAGGGGCAGATGCCCACAGCTTCTGCTCCCACTGCTCGCCCAC
CAAATTCACCACCGTGCACTTGATGCTGAACTGCACCAGCCCAACCCCCGTGGTCAAGAT
GGTGATGCAAGTAGAAGAGTGTCAGTGCATGGTGAAGACGGAACGTGGAGAGGAGCGCCT
CCTACTGGCTGGTTCCCAGGGTTCCTTCATCCCTGGACTTCCAGCTTCAAAAACAAACCC
ATGAATTACCTCAACAGAAAGCAAAACCTCAACAGAATAAGTGAGGGTTATTCAATCTGG
AAATGTTATGTGAGTTATATAAAGATCAGTGGAAAATATCTTTCTCTCTCCCTCTCTCCC
CCTCTCTCTTCTCTCTATTTTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTCTC
TCACACACACACACACACACACACACACACACACACATGTTTGTGTTTAGACAGGGTCTTAT
GTATTCTCAGCTGGCCTCAAACTCACAATGTGGCTGGGGATGATTTTAAACTCCTGATCC
AATTCCTGAGTGCTGGGATTACAGACATGCTCCATAANACATAGCTCCCAGAAGGATTTT
TAAAAGAGATTTTGCATGTTTCAAAGTTGCCTTTGAGACTCAGAAATATTTTGATNTATT
GAATGGCCTTGCCACAGATGTGGGAGGCAGCTTGCTTGGTGGCCCAAGTATTTTTTTTTT
GTTCGTTCAGAATTCTCCACATGAAGTTTTTACTGTTGGTTATCTGGCGTTGAAGAAGGA
ATAGTGAAGGTACTTTTAACAGTTTACACGTGGAAGGGGCTCAGGCACTAGGAACCAACC
TTTTCCCGGAATATGAGGAAAATACATGAACAGTATTAGAGTCACTTGAGGAAGTTACTA
GGAAACGCCATAAGTCTCCAAGTACATTGTGAGTCATTTTGAAGGACAATCGTGTATATA
GACGAAATCTTCTACTCGTATGCTTTTGAATCTTCTAGCAAGTTAGGTTTCTATGTTTGG
GCTTCTTCCTATTGTCTAAGAGTATGTGTGACAAATTCAACCTGACAAATACCTCAATGG
CAAATTCTGACCCTG

Gene Sequence Structure * 241 bp **Sequence Deleted** 528 bp

Size of full-length cDNA: 1752 bp

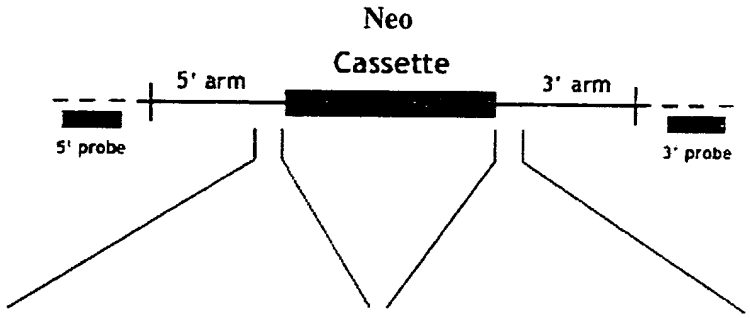
[redacted]

FIGURE 2A

Targeting Vector* (genomic sequence)

Construct Number: 269

Arm Length:
5': 2 kb
3': 1.7 kb



5'>TCCATCTGTGAATCTAACCTC AGTCTCTGGGAATCAGGAAGCATG CATCTCCTCTTAGTTCAGCTGCTT GTTCTCTTGCCTCTGGGGAAGGCA GACCTATGTGTGGATGGCTGCCAG AGTCAGGGCTCTTTATCCTTTCCT CTCCCAGAAAGGGGTCGCAGAGAT CTCCACGTGGCCAACCACGAGGAG GCAGAAGACAA<3' (SEQ ID NO:13)	5'>CCTGCCCATCAAAAGCCACGA AGTACACTGGGAGACCTGCAGGAC TGTGCCCTTCAACCAGGTATGCAT TCTAGAGGGTAAACCACCAGTTTG CCAGACAGGGAGGACAGCTGGACA GCTAGGACAAACGGCAAAATAGAA AGAGTCTGGCGAGAGCTCGGGCCT TGTCTAGTTCCAGATTCAGTCCTT TGGGTATTCAT<3' (SEQ ID NO:14)

Targeting Vector
Endogenous Locus

* Not drawn to scale

FIGURE 2B

TOT290 25526360

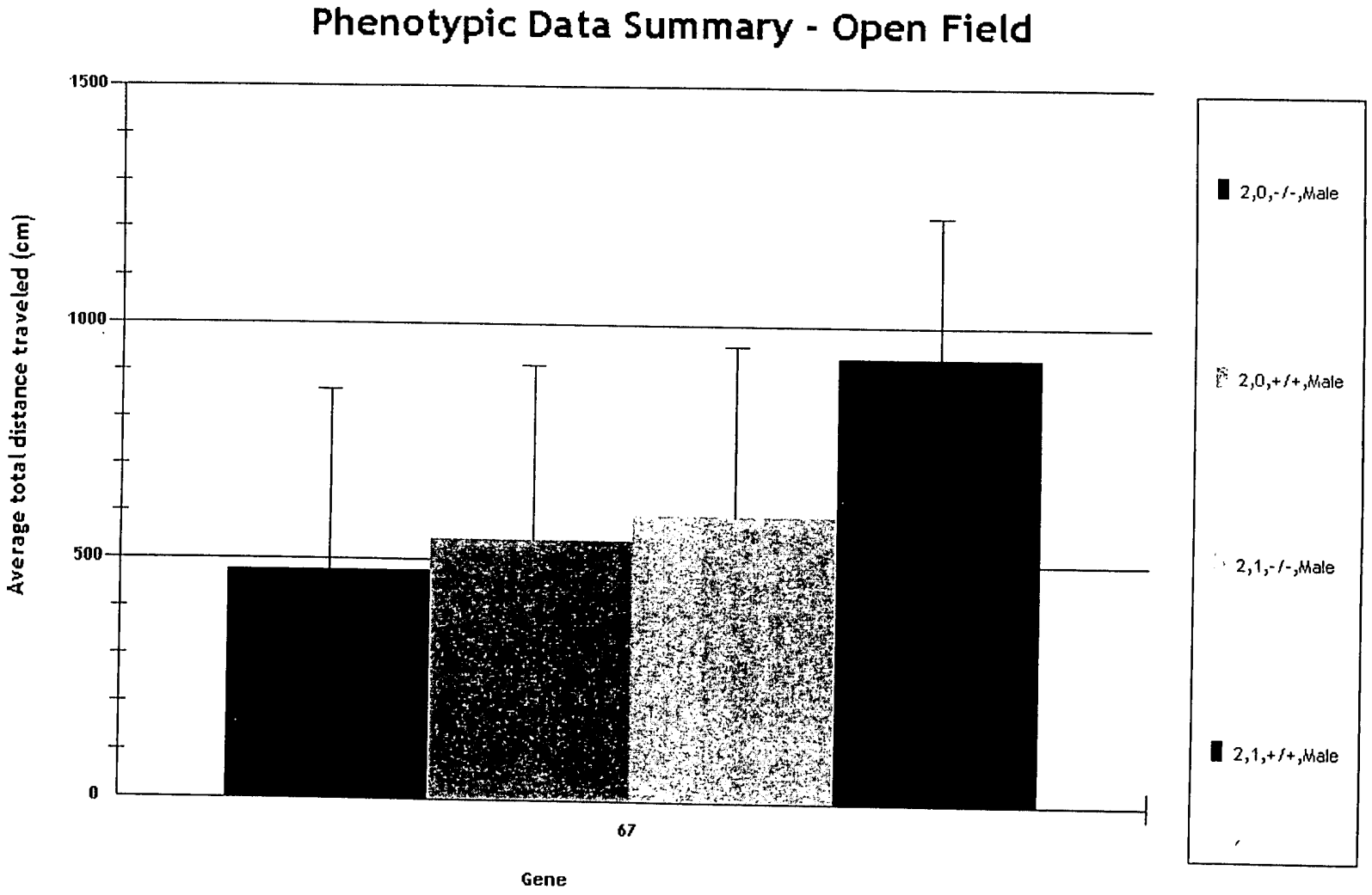


FIGURE 3

10:290 2552860

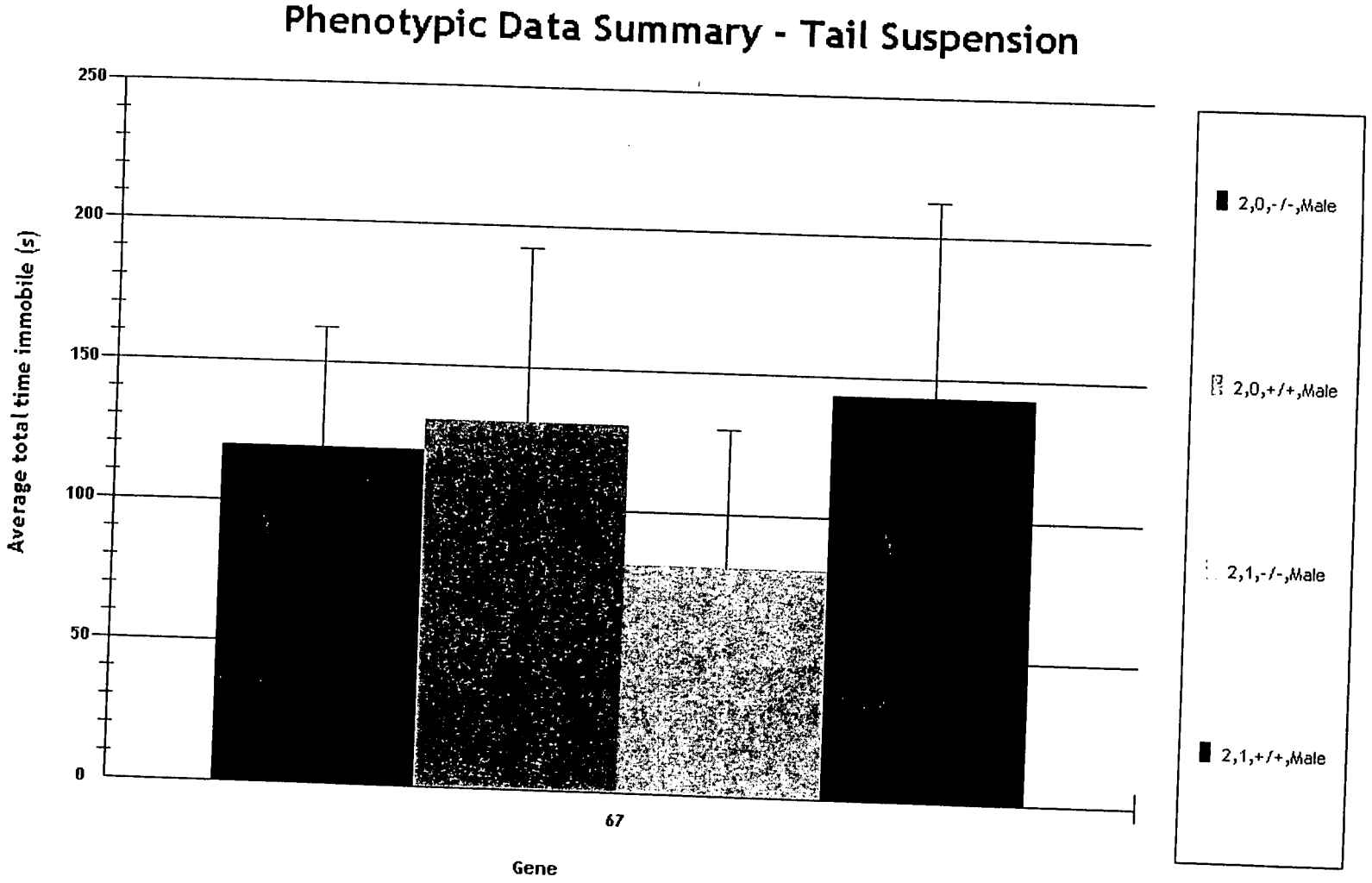


FIGURE 4